



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/01433

March 19, 2003

Tina Welch, Forest Supervisor
Ochoco National Forest
3160 NE Third Street
P.O. Box 490
Prineville, OR 97754

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Paulina Ranger District Culvert Replacement and Large Wood Placement Project, John Day River Basin, Wheeler County, Oregon

Dear Ms. Welch:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Paulina Ranger District Culvert Replacement and Large Wood Placement Project in Wheeler County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). The John Day River basin is designated as EFH for chinook salmon (*O. tshawytscha*).

If you have any questions regarding this letter, please contact Scott Hoefer of my staff in the Oregon Habitat Branch at 503.231.6938.

Sincerely,

Michael R. Crouse

D. Robert Lohn
Regional Administrator



cc: Brent Ralston, Prineville BLM
Dan Rife, Ochoco/Deschutes NF
Richard Vacirca, Ochoco NF
Jerry Cordova, USFWS
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Endangered Species Act - Section 7 Consultation Biological Opinion

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Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Paulina Ranger District Culvert Replacement and
Large Wood Placement Project, John Day River Basin
Wheeler County, Oregon.

Agency: Ochoco National Forest

Consultation
Conducted By: NOAA's National Marine Fisheries Service
Northwest Region

Date Issued: March 19, 2003

Issued by:

for Michael R. Crouse

D. Robert Lohn
Regional Administrator

Refer to: 2002/01433

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1. INTRODUCTION

1.1 Background and Consultation History

On December 9, 2002, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a complete biological assessment (BA), essential fish habitat (EFH) assessment, and request from the Ochoco National Forest (ONF) for Endangered Species Act (ESA) section 7 formal consultation and EFH consultation for the Paulina Ranger District Culvert Replacement and Large Wood Placement Project. The culvert replacement portion of the project is located on an unnamed tributary to Rock Creek, Baldy Creek, and Windy Creek within the Rock Creek watershed, which drains into the John Day River at river mile 204.5, and Black Canyon Creek, North Fork Wind Creek, and Squaw Creek within the Lower South Fork John Day River watershed. The large wood placement is proposed on North Fork Wind Creek and Squaw Creek. These areas are part of the Paulina Ranger District, ONF and are 10 to 15 miles south to southwest of Dayville, Oregon. Project sites on Baldy Creek, Windy Creek, the unnamed tributary to Rock Creek, and Black Canyon Creek are located in Wheeler County, Oregon, and the sites on North Fork Wind Creek and Squaw Creek are located in Grant County, Oregon.

The ONF has determined that the Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) occurs within the project area. MCR steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). NOAA Fisheries applied protective regulations to MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

This biological opinion (Opinion) reflects the results of the consultation process. The consultation process involved a site visit on June 20, 2002, where modifications to the proposal to reduce impacts to the indicated species were discussed. The ONF has incorporated the modifications into the proposed action.

The objective of this Opinion is to determine whether the proposed actions are likely to jeopardize the continued existence of the MCR steelhead.

1.2 Proposed Actions

Proposed actions are defined in NOAA Fisheries' regulations (50 CFR 402.02) as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." Because the ONF proposes to fund and implement the Paulina Ranger District Culvert Replacement and Large Wood Placement Project, it must consult under ESA section 7(a)(2).

1.2.1 Culvert Replacements

The culverts on Forest Road (FR) 3820 on Baldy Creek and Windy Creek, FR 3820-100 on Windy Creek, FR 3820-200 on a Rock Creek tributary, FR 38 on Black Canyon Creek, FR 5850 on North Fork Wind Creek, and FR 5850-400 on Squaw Creek are fish passage barriers and are

undersized with the potential for overtopping during high flows. This situation prevents downstream fish from accessing spawning and rearing habitat above the culverts and may result in sediment production from road damage and ditch scour during high flows. Therefore the culverts are being proposed for replacement. Culverts will be replaced using an excavator and dump truck. During culvert replacement, public and administrative access will be provided on the open forest road system. The objectives for replacing these culverts include: (1) Providing fish passage for adult and juvenile life stages (with the exception of the FR 3820-100 culvert); and (2) providing appropriately sized road crossing structures to pass flood flows and associated bedload. The culvert replacements will be monitored using photo points and other aquatic habitat inventories. Aquatic habitat inventories that follow these projects focus on investigating attributes of cross-sectional area, slope, pools, wood, shade, bedload particle distribution, and bank stability.

1.2.1.1 FR 3820-Baldy Creek Culvert Replacement

The proposal is to remove the existing Baldy Creek culvert, located at T14S, R25E, SW 1/4 of section 7, and replace it with a bottomless box culvert that is 60 feet long, 20 feet wide, and has 7.5 feet of clearance from the top of the culvert to the top of the footing. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the culvert. The new bottomless box culvert is designed to pass a 100-year flood and its associated bedload and debris, and provide fish passage for all life stages. The bankfull width of Baldy Creek at the culvert site is 12 feet. The culvert will span the entire floodplain width. The culvert removal would involve the removal of approximately 45 cubic yards of material. The culvert will be replaced within the designated in-water work period, July 15-August 31, identified by the Oregon Department of Fish and Wildlife (ODFW).

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic lined channel. If water is not diverted and fish are present immediately before the culvert is actually “pulled”, the fish would be removed prior to the “pull” because this would represent a sensitive time of construction that could have negative impacts on the fish. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the bottomless box culvert is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.2 Replacement of FR 3820-Windy Creek Culvert with a Bridge

The proposal is to remove the existing Windy Creek culvert, located at T14S, R25E, NW 1/4 of section 18, and replace it with a bridge that is 20 feet long, 40 feet wide, and has 15 feet of clearance from the bottom of the bridge to the stream bottom. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the bridge. The bridge is designed to pass a 100-year flood and its associated bedload and debris, and provide fish passage for all life stages. The bankfull width of Windy Creek at the bridge site is 8 feet. The bridge will span the entire floodplain width. The culvert removal would involve the removal of approximately 45 cubic yards of material. The culvert will be replaced with the bridge within the designated ODFW in-water work period, July 15-August 31.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the bridge is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.3 Replacement of FR 3820-100-Windy Creek Culvert with an Armored Ford

The proposal is to remove the existing Windy Creek culvert, located at T14S, R25E, SE 1/4 of section 7, and replace it with armored ford. The ford will be configured to allow Windy Creek to access its floodplain and pass 100-year flows and associated bedload and debris. The ford will consist of a buried base, with large cobble and/or small boulders, on top of which will be laid a natural stream bed of gravel-sized material. The bankfull width of Windy Creek at the armored ford site is 7 feet. The culvert removal would involve the removal of approximately 15 cubic yards of material. The culvert will be replaced with the armored ford within the designated ODFW in-water work period, July 15-August 31. The road will be open for administrative use only after the armored ford is constructed.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or

construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the ford is constructed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.4 FR 3820-200-Rock Creek Tributary Culvert Replacement

The proposal is to remove the existing Rock Creek tributary culvert, located at T14S, R24E, SE 1/4 of section 12, and replace it with a round pipe that is 35 feet long, and 5 feet in diameter. The round pipe is designed to pass a 100-year flood and its associated debris. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the culvert. The bankfull width of the unnamed tributary is 3 feet. The culvert will span the entire floodplain width. The culvert removal would involve the removal of approximately 20 cubic yards of material. The culvert will be replaced with the armored ford within the designated ODFW in-water work period, July 15-August 31. This unnamed tributary is a high-gradient, non-fish-bearing stream. Water will be diverted around the project site where perennial flow occurs during construction activities.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the round pipe is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.5 FR 38-Black Canyon Creek Culvert Replacement

The proposal is to remove the existing Black Canyon Creek culvert, located at T14S, R25E, NE 1/4 of section 9, and replace it with a bottomless arch that is 40 feet long, 13 feet wide, and the top of the arch is seven feet above the culvert footing. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream side of the culvert. The bottomless arch is designed to pass a 100-year flood and provide fish passage for all life stages. The bankfull width of the unnamed tributary is five feet. The bottomless arch will span the entire floodplain width. The culvert removal would involve the removal of approximately 40 cubic yards of material. The culvert will be replaced with the bottomless arch within the designated ODFW in-water work period, July 15-August 31.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic-lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the bottomless arch is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.6 FR 5850-North Fork Wind Creek Culvert Replacement

The proposal is to remove the existing North Fork Wind Creek culvert, located at T14S, R26E, SW 1/4 of section 8, and replace it with a bottomless arch that is 50 feet long, and 16 feet wide, and the top is 7.5 feet above the culvert footing. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the culvert. The bottomless arch is designed to pass a 100-year flood and its associated debris, and to provide fish passage for all life stages. The bankfull width of North Fork Wind Creek at the culvert site is eight feet. A 24-inch round pipe will be installed on the southeast side of the new culvert for floodplain relief. The culvert removal would involve the removal of approximately 40 cubic yards of material. The culvert will be replaced with the bottomless arch within the designated ODFW in-water work period, July 15-August 31.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic-lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the bottomless arch is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.1.7 FR 5850-400-Squaw Creek Culvert Replacement

The proposal is to remove the existing Squaw Creek culvert, located at T14S, R26E, SE 1/4 of section 9, and replace it with a sunken pipe-arch that is 30 feet long, 15 feet wide, and six feet tall. There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the culvert. The sunken pipe-arch is designed to pass a 100-year flood and its associated debris, and provide fish passage for all life stages. The bankfull width of Squaw Creek is six feet. The sunken pipe-arch will span the entire floodplain width. The culvert removal would involve the removal of approximately 30 cubic yards of material. The culvert will be replaced with the sunken pipe-arch within the designated ODFW in-water work period, July 15-August 31.

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic-lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction will be removed (by netting) and transported from the construction zone either upstream approximately 200 feet or downstream approximately 500 feet. Water will be diverted around the project site where perennial flow occurs during construction activities. Fish passage will be provided through the temporary diversion and access habitat above the project site.

After the sunken pipe-arch is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.2 Large Wood Placement

Large wood will be placed in approximately two miles of North Fork Wind Creek in T15S, R26E, sections 8, 15, and 17, and approximately one mile of Squaw Creek in sections 9, 10, and 15. Large wood will be obtained from surplus log decks from past timber sales on the Paulina Ranger District, and from down logs on side slopes adjacent to the streams. A walking backhoe will be used to place large wood, although no machinery will enter the channel. The large wood

will be placed 20 to 60 degrees from the angle of the stream bank, and 40 to 70% of the total log will be below bankfull. No excavation will be done. The large wood will be placed within the designated ODFW in-water work period, July 15-August 31. The objectives of this part of the proposed action are to: (1) Provide in-stream holding cover for steelhead and redband trout; (2) assist in sorting gravels for spawning; (3) provide new pool habitat in order to increase salmonid distribution; (4) provide an additional source of stream shade while riparian areas recover from past timber harvest; and (5) reduce shear stress on stream banks susceptible to erosion. Large wood placement will be monitored using photo points and other aquatic habitat inventories. Aquatic habitat inventories that follow these projects focus on investigating attributes of cross-sectional area, slope, pools, wood, shade, bedload particle distribution, and bank stability.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402.02 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the consultation regulations combined with the Habitat Approach (NMFS 1999) in the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to jeopardize the continued existence of species survival in the wild. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects, and added to the environmental baseline, is likely to jeopardize the ESA-listed species. If the action is likely to jeopardize the species, NOAA Fisheries will identify reasonable and prudent alternatives for the action that would avoid jeopardy.

2.1.1.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally-reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, adult and juvenile migration, and rearing (*i.e.*, removing fish passage barriers to allow access to upstream habitat and placing large wood debris to increase habitat complexity). In addition, culverts will be sized to pass 100-year flows, thus reducing the risk of failure and allowing habitat forming processes (wood and substrate transport) to occur. The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

2.1.1.2 Environmental Baseline

The current range-wide status of the identified ESU may be found in Busby, *et al.* (1995). The identified action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream, based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where the actions described in this Opinion lead to additional activities, or affect ecological functions, thus contributing to stream degradation. As such, the action area for the proposed activities includes the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Baldy Creek, Windy Creek, the unnamed tributary to Rock Creek, Black Canyon Creek, North Fork Wind Creek, and Squaw Creek, beginning at the downstream extent of the turbidity plume below each of the stream crossings, to immediately upstream of each crossing, and for the large wood placement, approximately two miles of North Fork Wind Creek in T15S, R26E, sections 8, 15, and 17, and approximately one mile of Squaw Creek in sections 9, 10, and 15. Other areas of the John Day River watershed are not expected to be directly or indirectly impacted.

Baldy Creek, Windy Creek, and the unnamed creek are tributaries to Rock Creek, a tributary to the John Day River. These streams are located in the Ochoco Mountains, the westernmost extension of the Blue Mountains of central and northeastern Oregon. Baldy Creek and Windy Creek both contain MCR steelhead while the unnamed tributary is non-fish-bearing, and each of the culverts to be replaced are barriers to upstream migration. The Ochoco National Forest administers 35% of the Rock Creek watershed. High gradient (2 to 10 %) streams make up the complex channel network within the watershed. Rock Creek, Baldy Creek, and Windy Creek consist primarily of Rosgen B stream types (Rosgen and Silvey 1998). Rock Creek transitions to a C4 stream type in the upper headwater reaches with average bankfull widths of 45 feet in the

lower reaches, to less than 12 feet in the upper reaches. The hydrograph within these drainages is best described as a snowmelt hydrograph. These drainages also have some characteristics of spring-fed systems.

Generally, upland vegetation within the Rock Creek watershed, including the project area, consists of contiguous forest stands of mixed conifer species. In addition, riparian vegetation (mountain alder, willow, dogwood, *etc.*) is dominant adjacent to the stream channels. Rock Creek and Baldy Creek play an important role in juvenile steelhead rearing with deep pools that provide cooler temperatures.

The checklist from *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) was used to document baseline habitat conditions. The important indicators relative to the culvert replacements include temperature, sediment, substrate, physical barriers, refugia, width/depth ratio, streambank condition, floodplain connectivity, and riparian reserves.

Temperature is rated as not properly functioning in the Rock Creek project areas. Site conditions near the current culverts (*e.g.*, pooling of water in unshaded areas, widening of the channel) have a negative effect on temperature. Also, Rock Creek is 303(d) listed for temperature concerns, but Baldy Creek and Windy Creek are not listed. Canopy cover in Rock Creek, Baldy Creek, and Windy Creek averages 60 to 80%. Average seven day maximum water temperatures in Rock Creek are 63 to 70 °F from July through September, and it is assumed that temperatures are similar in Baldy Creek and Windy Creek. Stream temperatures range from 46 to 57 °F (daily maximum) during times of steelhead migration and spawning (April-May).

Sediment is rated as at risk in the Rock Creek project areas. This rating is primarily based on visual observations of flood flows and channel characteristics at culvert crossings. There are multiple undersized culverts in the area which have contributed to the unnatural sediment regime.

Substrate is rated as properly functioning in the Rock Creek project areas. Habitat surveys have shown that particle distributions upstream and downstream of culverts are characteristic of what would be expected in the area naturally.

The physical barriers indicator in the Rock Creek project areas is rated as not properly functioning. The culverts to be replaced in the watershed are upstream passage barriers to adults and juveniles at a range of flows. There are no other culvert barriers on ONF land, but there may be on private land downstream.

Refugia is rated as at risk for the Rock Creek project areas, because existing culverts do not have natural substrate bottoms, and water velocities are too high for fish to migrate through or hold in the culverts.

Width-to-depth ratio is rated as at risk for the Rock Creek project areas. The undersized culverts in conjunction with flood flows have changed the channel dimensions, and therefore changed the width-to-depth ratios.

Streambank condition is rated as at risk for the Rock Creek project areas. Bank stability in the project area was influenced by past timber and livestock management, but is improving, and changes in channel dimensions from undersized culverts and flood flows have contributed to decreased bank stability.

Floodplain connectivity is rated as at risk for the Rock Creek project area, due to down cutting created by undersized stream crossings. Riparian reserves are rated as at risk in the Rock Creek project areas, because down cutting described above has resulted in a change in riparian vegetative components.

Black Canyon Creek, North Fork Wind Creek, and Squaw Creek are tributaries to the South Fork John Day River and are within the Lower South Fork John Day River watershed. These streams are also located in the Ochoco Mountains, the westernmost extension of the Blue Mountains of central and northeastern Oregon. Black Canyon Creek, North Fork Wind Creek, and Squaw Creek contain steelhead, and each of the culverts to be replaced are barriers to upstream migration. High gradient (3 to 12 %) streams make up the complex channel network within the watershed. Black Canyon Creek, North Fork Wind Creek, and Squaw Creek consist primarily of Rosgen B stream types. Black Canyon Creek is primarily a spring-fed system that exhibits fluctuations in flow during times of snowmelt. The hydrograph for the Wind Creek subwatershed is best described as a snowmelt hydrograph.

Ninety percent of Black Canyon Creek is within the Black Canyon Wilderness. Therefore, Black Canyon Creek is in mostly pristine condition with natural catastrophic events periodically influencing the quality and stability of fish habitat. In July 2002, the “747 Fire” burned, in varying degrees of intensity, 85% of the Black Canyon Wilderness, while only a small portion of the headwaters in the Wind Creek subwatershed was burned. Black Canyon Creek, Squaw Creek, and North Fork Wind Creek were moderately affected and are expected to quickly recover.

As noted above, the important indicators relative to the culvert replacements include temperature, sediment, substrate, physical barriers, refugia, width-to-depth ratio, streambank condition, floodplain connectivity, and riparian reserves. The important indicators relative to the large wood placement include temperature, sediment, substrate, large woody debris, pool frequency, pool quality, streambank condition, and riparian reserves.

Temperature is rated as not properly functioning in the Lower South Fork John Day River watershed. Canopy cover in Black Canyon Creek, Squaw Creek, and North Fork Wind Creek averages 60 to 90 %. Average seven day maximum water temperatures in Black Canyon Creek are 63 to 70 °F from July to September. Average seven day maximum water temperatures in North Fork Wind Creek and Squaw Creek range from 68 to 77 °F from July to September.

Stream temperatures range from 46 to 59 °F (daily maximum) during times of steelhead migration and spawning (April-May).

Sediment is rated as not properly functioning in the Lower South Fork John Day River project areas. This rating is primarily based on visual observations of flood flows and channel characteristics at culvert crossings. There are multiple undersized culverts in the area which have contributed to the unnatural sediment regime.

The physical barriers indicator in the Lower South Fork John Day River project areas is rated as not properly functioning. The culverts to be replaced in the watershed are upstream passage barriers to adults and juveniles at a range of flows. A bedrock waterfall occurs downstream of the culvert barrier that is a barrier at certain lower flows.

Substrate is rated as properly functioning in the Lower South Fork John Day River project areas. Habitat surveys have shown that particle distributions upstream and downstream of culverts are characteristic of what would be expected in the area naturally.

Large woody debris is rated as at risk in the Lower South Fork John Day River watershed. Large wood along the entire length of Black Canyon Creek, Wind Creek, and North Fork Wind Creek is at or below ONF standards (2 pieces per 100 feet). Large wood in these drainages provides cover for fish, forms pools, and traps sediment. North Fork Wind Creek and Squaw Creek were identified for wood placement in order to improve habitat complexity. According to the BA, annual surveys and reports conducted by the ONF and ODFW in these streams have shown that steelhead build redds on gravel associated with in-channel wood.

Pool frequency is rated as at risk in the Lower South Fork John Day River watershed. As expected in B stream types, pools are found at low levels downstream from the projects. Pool densities within the project area are at moderate levels (1.3-2 per 100 feet) and are formed as a result of meander scour and large wood.

Pool quality is rated as at risk in the Lower South Fork John Day River watershed. Pools are formed by large wood and boulder/bedrock material. Black Canyon Creek and North Fork Wind Creek play an important role in juvenile steelhead rearing with deeper pools that provide cooler temperatures. As mentioned above, wood will be placed in North Fork Wind Creek and Squaw Creek to improve habitat complexity.

Refugia is rated as at risk for the Lower South Fork John Day River project areas, because existing culverts do not have natural substrate bottoms and water velocities are too high for fish to migrate through or hold in the culverts.

Width/depth ratio is rated as at risk for the Lower South Fork John Day River project areas. The undersized culverts in conjunction with flood flows have changed the channel dimensions, and therefore changed the width-to-depth ratios.

Streambank condition is rated as at risk for the Lower South Fork John Day River project areas. Bank stability within the project areas exhibit moderate to good conditions with some undesired impacts along North Fork Wind Creek from cattle grazing and past timber management practices.

Floodplain connectivity is rated as at risk for the Lower South Fork John Day River project areas, due to down cutting created by undersized stream crossings. Riparian reserves are rated as at risk in the Rock Creek project areas, because the downcutting described above has resulted in a change in riparian vegetative components.

Riparian reserves are rated as at risk in the Lower South Fork John Day River project areas, because down cutting described above has resulted in a change in riparian vegetative components. Riparian vegetation (*e.g.* mountain alder, willow, dogwood) is dominant adjacent to the stream channels.

Generally, upland vegetation within the Lower South Fork John Day River watershed, including the project area, consists of contiguous forest stands of mixed conifer species interspersed with scablands. During some summer months stream flows go subsurface 500 feet above the project area on North Fork Wind Creek, while perennial flow occurs for 800 feet above the FR 5850-400 road crossing on Squaw Creek.

Based on the best available information on the current status of MCR steelhead range-wide, the population status, trends, and genetics, and the poor environmental baseline condition within the action area (as described in the BA), NOAA Fisheries concludes that the biological requirements of the identified ESU are not currently being met within the action area. Numbers of MCR steelhead are substantially below historic numbers. Long-term trends are decreasing. The John Day River basin displays degraded habitat conditions resulting from agricultural practices, water diversions, road building, mining, forest management activities, and flooding. In addition to the habitat indicators discussed above, which are important relative to this project.

2.1.2 Analysis of Effects

2.1.2.1 Effects of Proposed Action

Step 3 of NOAA Fisheries' jeopardy approach, evaluates the effects of proposed actions on listed steelhead within the context of species survival with an adequate potential for recovery under the effects of the proposed action. The action also must restore, maintain, or at least not appreciably interfere with the recovery of the properly functioning condition (PFC) of the various fish habitat within a watershed.

The Paulina Ranger District Culvert Replacement and Large Wood Placement Project BA provides a detailed analysis of the effects of the proposed action on MCR steelhead in the action area. The analysis uses the matrix found in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) and information

in the BA to determine and evaluate the elements of the proposed action that have the potential to affect MCR steelhead and its habitat. As noted above, the habitat indicators affected by the culvert replacements include temperature, sediment, substrate, physical barriers, refugia, width-to-depth ratio, streambank condition, floodplain connectivity, and riparian reserves. The habitat indicators affected by the large wood placement include temperature, sediment, substrate, large woody debris, pool frequency, pool quality, streambank condition, and riparian reserves.

The temperature indicator rating will be moved slightly toward restoration, because stream shade will increase in the Lower South Fork John Day River watershed as a result of wood placement and in both watersheds as a result of riparian planting around the culvert sites.

The removal and installation of culverts and the placement of large wood will result in temporary increases in turbidity. Turbidity will be minimized by keeping the stream in the existing culvert during excavation or by routing the stream around the culvert work areas in a plastic lined channel, by placing large wood with a walking backhoe, by not excavating during large wood placement, and by not entering the channels with machinery. Localized turbidity at the culvert sites will be greatest after construction, when the stream is placed back into its original channel and disturbed fines are suspended in the water column. These localized increases in turbidity will likely displace steelhead in the project area and disrupt normal behavior. The effects are expected to be temporary and localized.

Undersized culverts produce sediment during higher flows when water is dammed behind the pipe and roadfill erodes. During larger events, flows can be high enough to erode roadfill to the extent that the pipe is washed out. In addition, undersized culverts have a smaller cross-sectional area than the stream channel so water velocities increase through the pipe giving the stream more energy to recruit sediment by eroding streambanks below the culvert. Over the long term, sediment generated by undersized culverts will be reduced by the new structures designed to pass 100-year events and the associated debris. The addition of large wood to North Fork Wind Creek and Squaw Creek will increase channel roughness which reduces water velocity. Reduced water velocity results in decreased bank erosion. As a result of replacing undersized culverts and adding large wood, the at risk rating for sediment in the Rock Creek and Lower South Fork John Day River watersheds will be moved toward properly functioning.

The culvert replacements will move the physical barrier rating toward properly functioning condition by replacing six undersized fish barrier culverts with structures that will provide fish passage, and are sized to pass flows and debris associated with a 100-year event.

Although substrate is rated properly functioning in both watersheds, the culvert replacement and large wood placement will improve substrate condition. Currently, the culverts do not have a natural substrate stream bottom, but after the culverts are replaced they will have natural substrate bottoms with the possible exception of the round pipe on the tributary to Rock Creek. The presence of natural substrate will allow MCR steelhead to pass through the culverts, rear in them, and potentially spawn in them. Large wood traps and stores spawning gravel, so wood placed in North Fork Wind Creek and Squaw Creek will improve substrate condition (Swanston

1991). The BA noted that past surveys showed steelhead redds occurring in gravel deposited in association with in-channel wood in the North Fork Wind Creek and Squaw Creek systems.

Large wood placement in approximately two miles of North Fork Wind Creek, and in one mile of Squaw Creek will move the large woody debris at risk rating for the Lower South Fork John Day River watershed toward properly functioning. The large wood will increase habitat complexity within the stream channel. It will provide cover for spawning adults and rearing juveniles, aid pool development, and trap and store spawning gravel. Large wood placement will move the at risk rating for pool frequency in the Lower South Fork John Day River watershed toward properly functioning, because the structure provided by the wood will interact with high flows to scour new pools or increase the size of existing pools. The at risk pool quality rating will also be moved toward properly functioning with the increase in cover provided by the large wood.

In addition, the removal of the passage barriers will move the at risk refugia rating for the Lower South Fork John Day River watershed toward properly functioning and further improve the refugia properly functioning rating for the Rock Creek watershed by providing MCR steelhead access to additional habitat. The placement of large wood in North Fork Wind Creek and Squaw Creek will also move the Lower South Fork John Day River watershed refugia rating toward properly functioning condition by improving habitat condition.

The culvert replacements will move the at risk rating for width/depth ratio and floodplain connectivity toward properly functioning. Six of the seven undersized culverts will be replaced with structures that span the width of the valley bottom and the seventh, which is a bottomless arch, will include a 24-inch round pipe in the fill for floodplain relief.

As noted above, undersized culverts increase water velocities as water passes through the culvert making it more likely that streambanks below the culvert will be eroded. The replacement of undersized culverts with culverts designed to pass 100-year events and the associated debris should result in less bank erosion below the culverts. As a result, the at risk rating for streambank condition will be moved toward properly functioning. The planting of riparian vegetation in areas disturbed by the installation of the culverts will also maintain streambank condition and have a positive effect on riparian reserves.

Isolation of the channel during culvert replacement would have direct effects to ESA-listed fish during the fish removal and relocation process. Direct harm to fish species may occur during structure removal and construction activities. The probability of harm is less likely because these activities would be conducted during the ODFW defined in-water work period, when fewer adult fish are likely to be present. During channel modification activities, fish will be removed from the work area and relocated to an area either upstream or downstream with adequate cover and water quality. Staging activities and operation of machinery adjacent to the stream could result in a spill of hazardous materials into the stream.

For the proposed action, NOAA Fisheries expects that the effects of the proposed project will tend to maintain or move towards restoration each of the habitat elements over the long term, greater than one year. However, in the short term, a temporary increase in sedimentation and turbidity, and disturbance of riparian and instream habitat is expected. Fish will be temporarily displaced, and possibly injured or killed during work isolation and fish salvage. The net effect from the proposed action, is the maintenance and restoration of functional steelhead habitat conditions.

2.1.2.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Other activities within the watershed have the potential to impact fish and habitat within the action area. A wide variety of actions including ranching, irrigation, and timber harvest occur within the John Day watershed. Non-Federal activities within the watershed are expected to increase with a projected 34% increase in human population over the next 25 years in Oregon (Oregon Department of Administrative Services 1999). Thus, NOAA Fisheries assumes that future private and state actions will continue within the watershed, but at increasingly higher levels as population density climbs.

2.1.3 Conclusion

After reviewing the current status of MCR steelhead, the environmental baseline for the action area, the effects of the proposed Paulina Ranger District Culvert Replacement and Large Wood Placement Project and cumulative effects, it is NOAA Fisheries' opinion that this project, as proposed, is not likely to jeopardize the continued existence of MCR steelhead. NOAA Fisheries believes that the proposed action would cause a minor, short-term increase in stream turbidity in Baldy Creek, Windy Creek, the unnamed tributary to Rock Creek, Black Canyon Creek, North Fork Wind Creek, and Squaw Creek downstream from the project area. In the long term, survival and safe passage conditions for adult and juvenile MCR steelhead will be improved. Although direct mortality of juvenile MCR steelhead from this project could occur during in-water work, the level of potential mortality would be minimal and would not result in jeopardy.

These conclusions are based on the following considerations: (1) Replacement of the six undersized culverts will allow access by MCR steelhead to previously unavailable spawning and rearing habitat; (2) large wood will be placed in North Fork Wind Creek and Squaw Creek to improve habitat complexity; (3) work will be conducted during low water and within the ODFW designated in-water work period to decrease the likelihood of encountering fish during construction; (4) revegetation of the banks will result in long-term improvement of riparian resources; and (5) NOAA Fisheries expects that the net effect of the proposed action will be to maintain or help restore properly functioning habitat conditions in the project area of Baldy Creek, Windy Creek, the unnamed tributary to Rock Creek, Black Canyon Creek, North Fork Wind Creek, and Squaw Creek.

2.1.4 Conservation Recommendations

Conservation recommendations are defined as “discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information” (50 CFR 402.02). Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. NMFS has no additional conservation recommendations regarding the action addressed in this Opinion.

2.1.5 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the agency action that may affect listed species in a manner or to an extent not considered in this Opinion; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. The ONF may also be required to reinitiate consultation if the proposed action is not consistent with conservation measures developed through the pending consultation on land and resource management plans for Federal land management units in the Mid- and Upper Columbia River basins. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending conclusion of the reinitiated consultation.

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.2.1 Amount and Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of MCR steelhead because of detrimental effects from increased sediment levels (non-lethal), the potential for direct incidental take during isolation of the work area (lethal and non-lethal), and delayed mortality due to handling during the fish removal process. Effects of actions such as the placement of large wood in the channel and increased sediment levels are largely unquantifiable in the short term, and are not expected to be measurable as long-term harm to habitat features or by long-term harm to MCR steelhead behavior or population levels. Therefore, even though NOAA Fisheries expects some low level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable." Based on the information in the BA, NOAA Fisheries anticipates that an unquantifiable amount of incidental take is reasonably certain to occur as a result of the actions covered by this Opinion.

In addition, NOAA Fisheries expects that the possibility exists for handling MCR steelhead during the work isolation process, which will result in incidental take to individuals during the construction period. NOAA Fisheries anticipates that incidental take of up to 26 juvenile MCR steelhead could occur as a result of the fish removal process due to dewatering and rewatering of the channel. The extent of the take is limited to MCR steelhead within the action area. The extent of the take for the culvert projects includes the streambed and streambank of Baldy Creek, Windy Creek, the unnamed Rock Creek tributary, Black Canyon Creek, North Fork Wind Creek, and Squaw Creek, beginning at the downstream extent of the turbidity plume below the culvert replacements on Forest Roads 3820, 3820-100, 3820-200, 38, 5850, and 5850-400, to immediately upstream of each culvert. The extent of the take for the large wood placement includes the streambed and streambank of approximately two miles of North Fork Wind Creek in T15S, R26E, sections 8, 15, and 17, and approximately one mile of Squaw Creek in sections 9, 10, and 15, beginning at the downstream extent of the turbidity plume below the most downstream piece of large wood, to immediately upstream of the most upstream piece of large wood.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from implementation of this Opinion. The ONF shall:

1. Minimize the likelihood of incidental take from culvert replacement and bridge placement actions by using an approach that maximizes the maintenance or improvement of ecological functions.

2. Minimize the likelihood of incidental take from activities involving culvert replacement, bridge placement, large wood placement, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage by avoiding or minimizing disturbance to riparian and aquatic systems.
3. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (culvert replacement and bridge placement) are isolated from flowing water.
4. Complete a comprehensive monitoring and reporting program to ensure that implementation of these conservation measures is effective in minimizing the likelihood of take from permitted activities.

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, ONF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To implement reasonable and prudent measure #1 (culvert replacement and bridge placement), the ONF shall ensure that:
 - a. The use of rock and riprap is avoided or minimized.
 - i. Rocks will be individually placed in a way that produces an irregularly-contoured face to provide velocity disruption.
 - ii. No end dumping will be allowed.
 - b. Any in-stream large wood or riparian vegetation that is moved or altered during construction will stay on site, be replaced during site restoration, or be replaced with a functional equivalent.
 - c. Where feasible, the bankline will be revegetated using natural vegetation.
2. To implement reasonable and prudent measure #2 (culvert replacement, bridge placement, large wood placement, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage), the ONF shall ensure that:
 - a. Project design. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized.
 - b. In-water work. All work within the active channel will be completed within the in-water work period of July 15 - August 31 for the site as recommended by ODFW. Extensions of the in-water work period must be approved by NOAA Fisheries.
 - c. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for the project to prevent point-source pollution related to

construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:

- i. Measures will be taken to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations and staging areas.
 - ii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - iii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - iv. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- d. Pre-construction activities. Prior to significant alteration of the action area, the following actions will be accomplished:
- i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
 - iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- e. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
- i. Boulders, rock, woody materials and other natural construction materials used for the project, except logs obtained from side slopes for large wood placement in North Fork Wind Creek and Squaw Creek, must be obtained from outside of the riparian area or as otherwise approved by NOAA Fisheries.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.
 - iii. All exposed or disturbed areas will be stabilized to prevent erosion.

- (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,¹ mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within 7 days of exposure.
 - (2) All other areas will be stabilized as quickly as reasonable, but within 14 days of exposure.
 - (3) Seeding outside of the growing season will not be considered adequate for permanent stabilization.
- f. Heavy Equipment. Heavy equipment will be fueled, maintained and stored as follows:
 - i. Vehicle staging, maintenance, refueling, and fuel storage areas will be a minimum of 150 feet horizontal distance from any stream.
 - ii. All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
 - iii. When not in use, vehicles will be stored in the vehicle staging area.
- g. Site restoration. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching and fertilizing, will be done in the following manner:
 - i. Disturbed areas will be planted with native vegetation specific to the project vicinity and/or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
 - ii. No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
 - iii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
 - iv. Plantings will achieve an 80% cover success after five years.
 - (1) If success standard has not been achieved after five years, the applicant will submit an alternative plan to NOAA Fisheries. This alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue, and monitoring reports will be submitted to NOAA Fisheries on an annual basis for at least five years, and until site restoration success has been achieved.
3. To implement reasonable and prudent measure #3, the ONF shall ensure that the in-water work activities (culvert replacement and stream channel relocation), are isolated from flowing water.

¹ By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
- i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
 - ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.
 - iv. Seined fish must be released as near as possible to capture sites.
 - v. If a dead, injured, or sick listed species specimen is found, initial notification must be made to the NOAA Fisheries Law Enforcement Office, in the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, WA 98661; or call: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care. Dead specimens should be handled to preserve biological material in the best possible state for later analysis of cause of death. With the care of sick or injured listed species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.
 - vi. The ONF shall ensure that no ESA-listed fish are transferred to third parties other than NOAA Fisheries personnel without prior written approval from the NOAA Fisheries.
 - vii. The ONF shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.
 - viii. The ONF must allow the NOAA Fisheries or its designated representative to accompany field personnel during the seining activity and allow such representative to inspect the seining records and facilities.
 - ix. A description of any seine and release effort will be included in a post project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

- b. After completion of the project the existing channel should be re-watered in a way that will not significantly impact water quality or cause fish stranding.
- 4. To implement reasonable and prudent measure #4 (monitoring and reporting), the ONF shall ensure that:
 - a. Within 120 days of completing the project, the ONF shall ensure submittal of a monitoring report to NOAA Fisheries describing the ONF's success meeting their permit conditions. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name;
 - (2) starting and ending dates of work completed for this project; and
 - (3) the ONF contact person.
 - ii. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - iii. Site restoration. Documentation of the following conditions:
 - (1) Finished grade slopes and elevations;
 - (2) log and rock structure elevations, orientation, and anchoring, if any;
 - (3) planting composition and density; and
 - (4) a plan to inspect and, if necessary, replace failed plantings and structures for a period of five years.
 - iv. A narrative assessment of the effects of the project on natural stream function.
 - v. Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (1) Photographs will include both general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
 - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
 - b. On an annual basis, for five years after completing the project, the ONF shall ensure submittal of a monitoring report to NOAA Fisheries describing the ONF's success in meeting their site restoration goals. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name;

- (2) starting and ending dates of work completed for this project; and
 - (3) the ONF contact person.
 - ii. Site restoration. Documentation of the following conditions:
 - (1) Any changes in log structure elevations and orientation;
 - (2) any changes in planting composition and density; and
 - (3) a plan to inspect and, if necessary, replace failed plantings and structures.
 - iii. A narrative assessment of the effects of the project on natural stream function.
 - iv. Photographic documentation of environmental conditions at the project site after project completion as they relate to fish passage and site restorations goals as described above.
 - (1) Photographs will include general both project location views and close-ups showing details of the project area and habitat features of the channel relocated reaches.
 - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, as they relate fish passage and site restorations goals.
- c. Submit monitoring reports to:

NOAA Fisheries
 Oregon Habitat Branch, Habitat Conservation Division
 Attn: 2002/01433
 525 NE Oregon Street, Suite 500
 Portland, Oregon 97232-2778

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the EFH consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH

descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed

descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed actions are detailed above in section 1.2. The action area is defined as the streambed and riparian habitat of Baldy Creek, Windy Creek, the unnamed tributary to Rock Creek, Black Canyon Creek, North Fork Wind Creek, and Squaw Creek, beginning at the downstream extent of the turbidity plume below each of the stream crossings, to immediately upstream of each crossing, and for the large wood placement, approximately two miles of North Fork Wind Creek in T15S, R26E, sections 8, 15, and 17, and approximately one mile of Squaw Creek in sections 9, 10, and 15. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in section 2.1.3, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These impacts include increases in turbidity, disturbance to the beds and bank of the river, removal of riparian vegetation, and the potential for pollutants to enter the water.

3.6 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the ONF and all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3, respectively, are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation

recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The ONF must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion.

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